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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,347	02/07/2002	Koichiro Kishima	SON-2363	4610

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EXAMINER

PAK, SUNG H

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,347

Applicant(s)

KISHIMA, KOICHIRO

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 12, 14, 16-21, 23-24, 26, 28-33, 35-40, 42-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Knapp et al (US 5,768,456).

Knapp et al reference discloses an optical device with all the limitations set forth in the claims, including: a light outgoing member ("117" Fig. 4), having an array of a plurality of light outgoing portions (column 3 lines 1-6), for allowing light to go out of each of said plurality of light outgoing portions; a light incoming member having a plurality of light incoming portions arrayed in such a manner as to correspond to said light outgoing portions ("114, 115" Fig. 4); and an optical lens array ("140" Fig. 4) having a lens substrate ("142" Fig. 4) made from an optical material and a plurality of optical lens portions arrayed on said lens substrate in such a manner as to correspond to said light outgoing portions; wherein a light ray, which has gone out of each of said light outgoing portions of said light outgoing member, is coupled to the corresponding one

Art Unit: 2874

said light incoming portions of said light incoming member by said optical lens array (Fig. 4); wherein the light incoming member is an array of plurality of optical fibers; wherein the light outgoing member is a light emitting device array; wherein the light emitting portions, optical fibers, optical lens portions are arrayed in lines (Fig. 5); wherein the light emitting device array may be a semiconductor laser array (column 2 lines 58-67); wherein each of the optical lens portions of the optical lens array is formed into a convex shape on the lens substrate (Fig. 4).

Regarding claims 42-49, applicant is claiming the product including the process of making the optical coupling device, and therefor are of "product-by-process" nature. The courts have been holding for quite some time that: the determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made. *In re Thrope*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985); and patentability of claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. Applicant has chosen to claim the invention in the product form. Thus a prior art product which possesses the claimed product characteristics can anticipate or render obvious the claim subject matter regardless of the manner in which it is fabricated. A rejection based on 35 U.S.C. section 102 is, therefore, proper.

Art Unit: 2874

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-11, 22, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp et al (US 5,768,456).

Knapp et al reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not explicitly teach the use of two-dimensionally arrayed light emitting portions, optical fibers and optical lens. However, two-dimensional arrangement of light emitting devices, optical fibers, and coupler lens is well known and commonly used in the art. Such an arrangement provides a well-known advantage of allowing for a high-density packaging of optical communication devices. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Knapp et al device to have two-dimensional arrangement of light emitting devices, optical fibers, and optical lens.

Claims 13, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp et al (US 5,768,456) in view of Althaus et al (US 6,434,297).

Knapp et al reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of light absorber formed on the lens substrate.

Althaus et al reference, on the other hand, explicitly teaches the use of a light absorber material formed on the lens substrate in order to block portion of the light beam emitted by the light emitting device before it gets coupled to the fiber (Fig. 1). Althaus et al teach that such an arrangement is advantageous because it effectively blocks of the periphery light and increases light coupling efficiency. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Knapp et al device to have light absorbing material disposed on the lens substrate.

Claims 15, 27, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp et al (US 5,768,456) in view of Rastani (US 5,073,041).

Knapp et al reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of a groove formed at the boundary between each optical lens. However, grooves being formed on the lens substrate between each individual lens are known in the art.

Rastani reference explicitly teaches such grooves ("37" in Fig. 3). Rastani teaches that Fresnel microlenses, which contains grooves between the lenses, are advantageous because it allows for a rugged and reliable lens assembly that focuses or collimates light beams into the fiber (column 1 lines 44-55). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Knapp et al device to have Fresnel microlense which contain grooves between the lenses.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kato et al (US 5,859,945), Robertson et al (US 5,857,042), Kravitz et al (US 5,790,730), and JP 58-171014 disclose array of light emitting devices optically coupled with array of optical fibers via optical microlenses arrays.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sung H. Pak
Examiner
Art Unit 2874

sp
August 5, 2003

HEMANG SANGHAVI
PRIMARY EXAMINER